UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0023

September 22, 1998

Russell Peterson
ATTN: Maureen Smith
Oregon State Office
U.S. Fish and Wildlife Service
2600 SE 98th, Suite 100
Portland, OR 97266

Re: Biological Opinion on Effects of Partners for Wildlife Program on Proposed and Listed Anadromous Salmonids in Oregon, 1998-2002

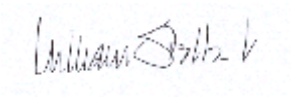
Dear Mr. Peterson:

Enclosed is the National Marine Fisheries Service's (NMFS) Endangered Species Act (ESA) section 7 biological opinion (Opinion) on the Partners for Wildlife (Partners) Program administered by your office in Oregon. A Biological Assessment (BA) describing the effects of your Partners Program in Oregon on proposed and listed anadromous salmonids was received by NMFS on July 16, 1998.

The objective of this biological opinion is to determine whether the implementation of the Partners Program in 1998-2002 is likely to jeopardize proposed/listed anadromous salmonids in Oregon, or adversely modify or destroy their designated habitat. Actions covered by this Opinion are those determined as "likely to adversely affect" (LAA) any of these ESUs. Although NMFS expects some effects to the environmental baseline from these actions, the effects are expected to be insignificant or beneficial because of project design or timing.

If you have any specific questions please contact Lance Smith at (503) 231-2307.

Sincerely,



William Stelle, Jr.
Regional Administrator

Enclosures

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Effects of Partners for Wildlife Program on Proposed and Listed
Anadromous Salmonids in Oregon, 1998-2002

Agency: U.S. Fish and Wildlife Service

Consultation
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: September 22, 1998

Refer to: OSB1998-0023

TABLE OF CONTENTS

I. Background 2

II. Proposed Action 4

III. Biological Information and Critical Habitat 4

IV. Evaluating Proposed Actions 4
- A. Biological Requirements 5
- B. Environmental Baseline 5

V. Analysis of Effects 6
- A. Effects of Proposed Actions. 6
- B. Effects of Interrelated and Interdependent Actions 8
- C. Cumulative Effects. 8

VI. Conclusion 9

VII. Conservation Recommendation 9

VIII. Reinitiation of Consultation 9

IX. References 10

X. Incidental Take Statement 11
- A. Amount or Extent of the Take 12
- B. Reasonable and Prudent Measures 12
- C. Terms and Conditions 12

ATTACHMENT 1 Application of Endangered Species Act Standards (to listed West Coast anadromous salmonids)

ATTACHMENT 2 NMFS' May 29, 1998, Draft Oregon Aquatic Habitat Restoration Activities Guide

I. Background

Multiple populations, or evolutionarily significant units (ESUs), of West Coast anadromous salmonids have been proposed or listed as threatened or endangered in Oregon under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS; Table 1).
A Biological Assessment (BA) describing the effects of the Partners for Wildlife (Partners) Program (1998-2002) administered in Oregon by the Oregon State Office (OSO) of the U.S. Fish and Wildlife Service (USFWS) on these ESUs was received by NMFS on July 16, 1998. The Partners Program administered by the USFWS's OSO office includes projects within the ranges of these proposed/listed ESUs.

The objective of this biological opinion is to determine whether the implementation of the Partners Program is likely to jeopardize the proposed/listed ESUs listed in Table 1 that occur in Oregon, or result in the destruction or adverse modification of designated critical habitat. Actions covered by this Opinion are those determined to be "likely to adversely affect" (LAA) any of these ESUs. Effects determinations were made using a method suggested by NMFS for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996b). Although NMFS expects some effects to the environmental baseline from these actions, the effects are expected to be insignificant or beneficial because of project design or timing.

Table 1. Information on listing status and designated critical habitat, and references for biological information, environmental baseline, and historical population trends for the listed and proposed anadromous salmonids on the West Coast (noted chronologically by Federal Register publication dates).

Species (ESU)	Listing Status		Critical habitat (Final Rule)	Biological Information, Historical Population Trends
	Proposed Rule	Final Rule		
Snake River Sockeye Salmon		11/20/91 56 FR 58619	12/28/93 58 FR 68543	Waples *et al*. 1991a; Burgner 1991
Snake River Fall Chinook Salmon		4/22/92 57 FR 34653	12/28/93 58 FR 68543	Waples *et al*. 1991b; Healey 1991
Snake River Spring/Summer Chinook Salmon		4/22/92 57 FR 34653	12/28/93 58 FR 68543	Matthews and Waples 1991; Healey 1991
Sacramento River Winter Chinook Salmon		1/4/94 59 FR 440	6/16/93 58 FR 33212	115/93, 55 FR 46515 Healey 1991
Umpqua River Cutthroat Trout		8/9/96 61 FR 41514	1/9/98 63 FR 1338	Johnson *et al*.1994; Trotter 1989

Central California Coho Salmon		10/31/96 61 FR 56138	N/A	Weitcamp *et al*. 1995; Sandercock 1991
Southern OR/Northern CA Coho Salmon		5/6/97 62 FR 24588	N/A	Weitcamp *et al*. 1995; Sandercock 1991
Southern California Steelhead		8/18/97 62 FR 43937	N/A	Busby *et al*. 1995; Busby *et al*. 1996
South-Central California Steelhead		8/18/97 62 FR 43937	N/A	Busby *et al*. 1995; Busby *et al*. 1996
Central California Coast Steelhead		8/18/97 62 FR 43937	N/A	Busby *et al*. 1995; Busby *et al*. 1996
Upper Columbia River Steelhead		8/18/97 62 FR 43937	N/A	Busby *et al*. 1995; Busby *et al*. 1996
Snake River Basin Steelhead		8/18/97 62 FR 43937	N/A	Busby *et al*. 1995; Busby *et al*. 1996
Lower Columbia River Steelhead		3/19/98 53 FR 13347	N/A	Busby *et al*. 1995; Busby *et al*. 1996
California Central Valley Steelhead		3/19/98 53 FR 13347	N/A	Busby *et al*. 1995; Busby *et al*. 1996
Oregon Coast Coho Salmon		8/10/98 63 FR 4258	N/A	Weitcamp *et al*. 1995; Sandercock 1991
Central Valley Spring Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Central Valley Fall Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Southern OR and CA Coastal Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Puget Sound Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Lower Columbia River Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Upper Willamette River Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Upper Columbia River Spring Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers *et al*.1998; Healey 1991
Upper Willamette River Steelhead	3/10/98 63 FR 11798		N/A	Busby *et al*. 1995; Busby *et al*. 1996

Middle Columbia River Steelhead	3/10/98 63 FR 11798		N/A	Busby *et al*. 1995; Busby *et al*. 1996
Hood Canal Summer Chum Salmon	3/10/98 63 FR 11774		N/A	Johnson *et al*.1997; Salo 1991
Columbia River Chum Salmon	3/10/98 63 FR 11774		N/A	Johnson *et al*.1997; Salo 1991
Ozette Lake Sockeye Salmon	3/10/98 63 FR 11750		N/A	Gustafson *et al*.1997; Burgner 1991

II. Proposed Action

The "proposed action" is the implementation of the Partners for Wildlife (Partners) Program by the USFWS within Oregon in 1998-2002. The Partners Program provides financial and technical assistance to private and non-federal landowners in partnership with other cooperating agencies and groups for restoration and improvement projects, and encourages landowners to enter into additional financial partnerships on each project. By matching funds in this way, greater on-the-ground benefits are realized for each Service dollar invested.

As described in the BA, the Partners Program implements, singularly or in combination, habitat restoration, creation, enhancement, or management actions which are defined as follows: 1) Habitat Restoration - the rehabilitation of degraded or lost habitat to the original community that likely existed prior to degradation, to the extent practicable, including natural hydrology, topography, and native vegetation; or the rehabilitation of degraded or lost habitat to an ecological community different from what existed prior to degradation, but which partially replaces original habitat functions and values and consists primarily of native vegetation; 2) Habitat Enhancement - the alteration of existing, degraded habitat to improve and/or increase specific fish and wildlife habitat functions and values; 3) Habitat Creation - the development of habitat types on previously degraded sites in order to mimic habitats which occur naturally in the immediate area and did not previously exist on the site in recent geologic time; and 4) Habitat Management - the periodic, routine, short-term actions that manipulate the physical, chemical, or biological characteristics of habitat to replace or replicate natural events, e.g. wildfire, floods, and drought, that occurred on the landscape prior to cultural intervention.

In the BA, USFWS committed to implementing the following guidelines on all Partners projects: NMFS' May 29, 1998, Draft Oregon Aquatic Habitat Restoration Activities Guide (Attachment 2), NMFS' Juvenile Fish Screen Criteria (NMFS 1995a), NMFS' Pump Intake Screen Guidelines (NMFS 1995b), NMFS' Culvert Passage Guidelines (NMFS 1996a), ODFW & ODF's guide to large woody debris placement in streams (ODFW & ODF 1995), and ODFW's in-water work guidelines (ODFW 1997).

III. Biological Information and Critical Habitat

Information on listing status and designated critical habitat of proposed and listed West Coast anadromous salmonids is described in Table 1. Citations for information on the biological requirements, environmental baseline, and the historical population trends are also given in Table 1.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, as defined by the consultation regulations (50 CAR Part 402). Attachment 1 describes how NMFS applies the ESA jeopardy standards to consultations on Federal actions affecting the habitat of proposed/listed species. As described in Attachment 1, the first steps in applying the ESA jeopardy standards are to define the biological requirements of the ESU and to describe the listed species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (described in reports cited in Table 1). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area. If the cumulative actions are found to jeopardize the listed species, or adversely modify or destroy designated critical habitat, then NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of the listed/proposed ESUs are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESUs. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed/proposed ESUs. This information is summarized in the literature cited in Table 1, and in Attachment 1.

B. Environmental Baseline

Current range-wide status of ESUs under environmental baseline. NMFS described the current population status of the proposed/listed species in the status reviews and proposed/final rules done for each of them (cited in Table 1). In the absence of adequate population data, habitat condition provides a means of evaluating the status of proposed/listed species for the environmental baseline assessment, as explained in Attachment 1.

Action Area. The “action area” is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CAR 402.02). Since this consultation is for the Partners Program in Oregon (which will be carried out exclusively on private land but may affect the species on non-private land through downstream effects), the action area is the state of Oregon within the ranges of all proposed/listed anadromous salmonids.

Current status of proposed/listed ESUs under environmental baseline within the action area. Environmental baseline conditions within the action area were evaluated for private land in the BA. This evaluation was based on the “matrix of pathways and indicators” described in "Making Endangered Species Act Effects Determinations for Individual or Grouped Actions at the Watershed Scale' (NMFS 1996b). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species. All environmental baseline conditions are "not properly functioning" when considered for private land in at least part of the action area.

Based on the best information available on the current status of the proposed/listed ESUs (Table 1), NMFS assumptions given the information available regarding population status, population trends, and genetics (see Attachment 1), and the not properly functioning environmental baseline conditions within the action area, NMFS concludes that not all of the biological requirements of the proposed/listed ESUs within the action area are currently being met under the environmental baseline. Actions that do not retard attainment of properly functioning aquatic conditions when added to the environmental baseline would not jeopardize the continued existence of anadromous salmonids.

V. Analysis of Effects

A. Effects of Proposed Actions. The effects determinations in the BA were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996b). This assessment method was designed for the purpose of providing adequate information in a tabular form in BAs for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on each of approximately 17 aquatic habitat factors in the project area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) completed for each type of project.

The results of the completed checklist for each Partners project type provide a basis for determining the overall effects on the environmental baseline in the action area. All actions covered in this opinion were shown to maintain or restore, over the long term (more than one year) the environmental factors that could potentially be affected by each of the projects. The USFWS further indicated where an action could have a short-term (less than one year) impact on an environmental factor but would continue to maintain the existing environmental baseline. For example, NMFS has identified sediment as an

environmental indicator that is affected by these types of actions. Sediment inputs from some types of projects would occur over the short-term due to instream or riparian work. With implementation of best management practices (BMPs - see Appendix E of BA) to reduce sediment inputs, it is expected that the existing environmental baseline would be maintained, and in some cases restored over the long-term. Nevertheless, short-lived adverse effects such as temporary increases in sediment have the potential to result in incidental take.

In-stream work, or work immediately adjacent to streams, associated with the Partners Program's projects (*project type in parentheses*) include; 1) structure placement (*instream enhancement*), 2) streambank revetment placement and secondary channel/backwater development (*riparian/upland restoration*), 3) fish ladder construction, culvert removal/replacement, and step pool development (*fish passage improvement*), and 4) overburden material removal (*wetland restoration*). It is anticipated that some unknown number of proposed/listed fish would be present during in-stream work or when work is done immediately adjacent to streams. The effects of the proposed action are summarized below by the relevant pathways used in NMFS (1996b)(water quality, habitat elements, flow & hydrology, channel condition & dynamics, and watershed condition).

Water Quality. NMFS (1996b) identifies water temperature, sediment, and chemical contamination/nutrient loading as factors affecting water quality. The proposed and ongoing activities are expected, over the long-term, to maintain or restore the current temperature, sediment, chemical contaminant, and nutrient load regimes of watersheds in the action area.

Factors influencing stream temperatures that are typically affected by human activities are stream discharge, channel morphology and vegetative cover. Reduction in flow can increase temperatures in the summer and decrease temperatures in the winter. Removal of stream) side vegetation reduces shade which can also increase summer and decrease winter temperatures. Destabilization of the stream bank also occurs from vegetation removal. This can influence channel morphology by eroding banks and widening streams which again can increase summer and decrease winter stream temperatures (Rhodes et al. 1994).

Some riparian vegetation would be removed due to the proposed action. E.g., removal of nonnative species and silvicultural activities (such as thinning) in riparian areas, clearing of vegetation for instream structure anchoring and off-channel habitat development, etc.. However, these activities are expected to have no more than a short-term negative effect on stream temperatures, followed by a long-term beneficial effect.

Short-term increases in sediment are expected to occur from all Partners projects that require in-stream work, and some projects which require riparian work. Releases of fine sediment degrade salmonid spawning and rearing habitat (Chapman and McLeod 1987, Bjornn and Reiser 1991). Sediment deposition in interstitial spaces increases cobble embeddedness, decreasing the carrying capacity of streams for rearing juvenile salmonids by reducing cover and macroinvertebrate production (Bjornn et

al 1977). Furthermore, temporary turbidity plumes may alter feeding and territorial behavior (Berg and Northcote 1985).

Erosion control measures will include, but are not limited to, silt fencing, hay bale and jutte matte placement, seeding by hand and hydro-seeding. Due to the brief and small-scale instream work associated with the proposed action as well as the erosion control measures, releases of sediment and resultant increases in turbidity would be temporary and localized and are not expected to degrade the environmental baseline over the long-term or preclude the attainment of properly functioning conditions.

Hazardous materials such as petroleum products could potentially enter the water. This could result in mortality to listed and proposed species. Measures will be taken to reduce this risk to a minimum. These measures include prohibiting staging or refueling in riparian areas and floodplains, and development of contingency plans

Habitat Access. One of the Partners project types is specifically designed to address habitat access (fish passage improvement), and is expected to improve habitat access through fish ladder construction, replacement of impassable culverts, baffling of high velocity culverts, and fish screening. These projects are expected to improve fish passage. The other Partners projects are not expected to affect habitat access.

Habitat Elements. Aquatic habitat elements identified by USFWS that have the potential to be affected by the Partners Program are substrate, large woody debris, pool frequency, pool quality and off) channel habitat, and refugia. The current baseline regarding these elements is expected to be at least maintained or restored, depending on the project type.

Channel Condition, Flow/Hydrology, and Watershed Condition. NMFS (1996b) identifies width/depth ratio, streambank stability, and floodplain connectivity as factors affecting channel condition; and peak/base flow and drainage network as factors affecting hydrology. The proposed actions would maintain the current baseline regarding these factors and is not expected to preclude attainment of proper function.

B. Effects of Interrelated Actions. Interrelated actions are defined as “those that are part of a larger action and depend on the larger action for their justification” (51 CFR §402 preamble). No interrelated actions were identified in this consultation as a result of the Partners Program.

C. Cumulative Effects. "Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" for this consultation is all private land within the ranges of all proposed/listed anadromous salmonids in Oregon.

A substantial portion of spawning and rearing habitat for proposed/listed anadromous salmonids occurs within the action area. Gradual improvements in habitat conditions for these species are expected on Federal lands in western Oregon as a result of Northwest Forest Plan implementation, as guided by ESA consultation. Historically, agriculture, livestock grazing, forestry and other activities on non-federal land have contributed substantially to temperature and sediment problems in Oregon (USDI 1995a,b,c; USDA 1995). Significant improvement in proposed/listed anadromous salmonid reproductive success on non-federal land is unlikely without changes in agricultural, forestry, and other practices.

NMFS is not aware of any activities or changes to existing State and private activities within the action area that would cause greater impacts to listed or proposed ESUs than presently occurs. In fact, now that these ESUs are proposed or listed, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result take. For actions on non-Federal lands which the landowner or administering non-Federal agency believes are likely to result in adverse effects to proposed/listed species or their habitat, the landowner or agency should work with NMFS to obtain the appropriate section 7 incidental take authorization, or section 10 incidental take permit, which requires submission of a habitat conservation plan. If a take permit is requested, NMFS would likely seek project modifications to avoid or minimize adverse effects and taking of listed fish. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. Conclusion

This conclusion is based on all Partners projects being designed and implemented in a manner consistent with the guidelines in Attachment 2, NMFS 1995a,b, 1996a, ODFW & ODF 1995, and ODFW 1997. The Partners Program administered in Oregon by the Oregon State Office (OSO) of the U.S. Fish and Wildlife Service (USFWS) considered in this Biological Opinion, as described in the BA, is not likely to jeopardize the continued existence of proposed/listed anadromous salmonids. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 1), when analyzing the effects of the proposed actions on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996b) to the proposed action and found that it would cause minor, short-term adverse degradation of some environmental baseline indicators. However, the proposed action is not expected to result in further degradation of aquatic habitat over the long term. Thus, the effects of the proposed action would not reduce prespawning survival, egg-to-smolt survival, or upstream/downstream migration survival rates to a level that would appreciably diminish the likelihood of survival and recovery of proposed/listed anadromous salmonids.

VII. Conservation Recommendations

In general, the actions proposed by the Partners Program should improve habitat conditions for proposed/listed anadromous salmonids. However, the program places a strong emphasis on instream restoration. In the past, instream projects designed to restore anadromous salmonid habitat have been inadequately evaluated biologically and shown to have high rates of physical failure. Thus, we have the following conservation recommendation for the Partners Program:

1. Emphasize road restoration, culvert removal/replacement, riparian replanting, bank stabilization, and construction of off-channel rearing habitats (alcoves, side channels, etc.). Instream projects should only be considered after all other priorities in the watershed are addressed.

VIII. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect the listed species in a way not previously considered; the action is modified in a way that causes an effect on the listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. To ensure protection for a species assigned an unquantifiable level of take, reinitiation of consultation is required: (1) if any action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16). New information includes any that shows Partners projects are not designed or implemented in a manner consistent with the guidelines in Attachment 2, NMFS 1995a,b, 1996a, ODFW & ODF 1995, and ODFW 1997.

IX. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BAs and additional information requested by NMFS and provided by the six administrative units.

Berg, L. and T.G. Northcote. 1985. Changes in territorial, gill-flaring, and feeding behavior in juvenile coho salmon following short-term pulses of suspended sediment. Can. J. Fish. Aq. Sci. 42:1410-1417.

Bjornn, T.C., M.A. Brusven, M.P. Molnau, J.H. Milligan, R.A. Klamt, E. Chaco, and C. Schaye. 1977. Transport of granitic sediment in streams and its effects on insects and fish. Forest, Wildlife and Range Station. Technical Report, Project B-036-IDA.

Bjornn, T.C. and Reiser D.W. 1991. Habitat requirements of salmonids in streams. p. 83-138. In: Meehan, W.R. (ed.). Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society Special Publ. 19.

Busby, P.J., T.C. Wainwright, and R.S. Waples. 1994. Status review for Klamath Mountains Province steelhead. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-19, 130 p.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-27, 261 p.

Chapman, D.W. and K.P. McLeod. 1987. Development of criteria for fine sediment in the Northern Rockies Ecoregion. Work assignment 2-73. Battelle Columbus Laboratories. EPA Contract No. 68-01-6986.

NMFS. 1995a. Juvenile fish screen criteria. National Marine Fisheries Service. Portland, OR.

NMFS. 1995b. Pump intake screen guidelines. Norlund, B. National Marine Fisheries Service. Portland, OR.

NMFS. 1996a. Culvert passage guidelines. Rainey, E., E. Meyer, B. Meyer. National Marine Fisheries Service. Portland, OR.

NMFS 1996b. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW and ODF. 1995. A guide to placing large wood in streams. (May 1995). Oregon Department of Fish and Wildlife, Portland, OR; Oregon Department of Forestry, Forest Practices Division, Salem, OR.

ODFW. 1997. Oregon guidelines for timing of in-water work to protect fish and wildlife resources. (January 1997). Oregon Department of Fish and Wildlife. Portland, OR.

Rhodes, J.J., D.A. McCullough, and F.A. Espinosa. 1994. A coarse screening process for potential application in ESA consultations. Columbia River Inter-Tribal Fish Commission. Portland, Oregon.

USDA (U.S. Dept. of Agriculture, Forest Service) 1995. Little River Watershed Analysis, Umpqua National Forest. Version 1.1 plus appendices.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1995a. Paradise Creek Watershed Analysis, Coos Bay BLM District.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1995b. Canton Creek Watershed Analysis, Roseburg BLM District.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1995c. West Fork Cow Creek Watershed Analysis, Medford BLM District.

Weitcamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Dep. Commer., NOAA Tech Memo. NMFS-NWFSC-24, 258 p.

X. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Biological Opinion (implementation of Partners Program by USFWS in Oregon, 1998-2002) has more than a negligible likelihood of resulting in incidental take of proposed/listed anadromous salmonids because of detrimental effects on suspended

sediment levels. Effects of management actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BAs, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize the take of proposed/listed anadromous salmonids.

1. The USFWS shall maximize the effectiveness of fish habitat restoration projects funded by the Partners Program.

C. Terms and Conditions

1. Apply the “key questions” in NMFS’ May 29, 1998, draft restoration guidelines (Attachment 2) to each project funded by the Partners Program as follows: USFWS must be able to answer all key questions for the specific type of activity in the affirmative, and provide a scientifically defensible explanation. If this is not possible, the proposed project must be modified in a way that satisfies this requirement.

2. To the “Large Wood Placement” key questions (starting on p.12) in NMFS’ May 29, 1998, draft restoration guidelines (Attachment 2), add the following key question: “6. Does the LWD to be placed rely on the size of wood relative to the stream size for stability rather than anchoring using cabling or other means?”